

SARDAR PATEL UNIVERSITY
M.Sc (III Semester) Microbiology Examination (CBCS)
Tuesday, 12th April, 2016
PS03EMIC06 –Toxicology. Time:2-30 to 5-30 pm

TOTAL MARKS: 70

1. Choose the most appropriate answer.

(1x8=8)

- i) In methanol poisoning, there is a central nervous system depression, cardiac depression and optic nerve atrophy. These effects are produced due to
a) formaldehyde and formic acid c) pyridine
b) acetaldehyde d) acetic acid
- ii) If tetraethylpyrophosphate (TEPP) has LD₅₀ of 1mg/kg of body weight and tetrachlorodibenzodioxin (TCDD) has LD₅₀ of 0.1mg/kg of body weight, which is more toxic?
a) TEPP c) both have same toxicity
b) TCDD d) none of the above
- iii) Estimated dose at which 5 % of the test subjects die is termed
a) LD 95 b) LD 5 c) LD 50 d) None of the above
- iv) If the concentration range over which toxic effects and/or therapeutic effects are seen is narrow,
a) TDM should be done c) Dosage should be increased
b) TDM is not required d) none of the above
- v) Benzoic acid, a food additive, is used as
a) Preservative b) Flavouring agent c) Emulsifier d) antioxidant
- vi) Paracetamol's action is attributed to central inhibition of
a) Cytochrome oxidase c) Cyclooxygenase
b) Glutathione d) NABQI
- vii) Carbon monoxide is a pollutant because
a) it reacts with O₂ c) makes nervous system inactive
b) it inhibits glycolysis d) reacts with haemoglobin
- viii) The 'pica' behaviour associated with children below five years of age is causes poisoning of _____
a) lead c) mercury
b) cadmium d) arsenic

2. Attempt any seven

(7x2=14)

- a) Differentiate between acute and chronic toxicity.
- b) List toxicants that disturb calcium homeostasis.
- c) Differentiate between toxicokinetics and toxicodynamics.
- d) Define the term 'bioaccumulation'.
- e) What are the forms of mercury available in nature?
- f) Define the term 'acid rain'.
- g) Differentiate intentional and unintentional food additives.
- h) Give few reasons for the need of pesticides?
- i) What is the significance of determining therapeutic index of drug?

3. a) Write a brief note on phase III metabolism. (06)

OR

b) Explain Bruce Ames's test. (06)

OR

b) List any six toxicants and give their toxic effects. (06)

4. a) Explain the mode of action of fungicides and pesticides. (06)

b) Write a note on DDT. (06)

OR

b) Write a note on environmental implications of insecticides. (06)

5. a) Explain HPRT gene-mutation test. (06)

b) Briefly explain the toxicity of mercury. (06)

OR

b) Write a note on effects of food preservatives on human health. (06)

6. a) Explain the effects of particulate pollution. (06)

b) Explain the chronic toxicity, metabolism and antidote for paracetamol. (06)

OR

b) Write an account on health hazards associated with asbestos pollution. (06)